

REMARKS

The foregoing amendments and these remarks are in response to the Final Office Action dated November 21, 2008. Applicants respectfully request a one month extension of time. This amendment is accompanied by a Request for Continued Examination. Authorization is given to charge the appropriate fees to Deposit Account No. 50-0951.

At the time of the Office Action, claims 1-26 were pending in the application. In the Office Action, claims 1-26 were rejected under 35 U.S.C. §103(a). The rejections are discussed in more detail below.

I. Rejections based upon Art

Claims 1-26 were rejected under 35 U.S.C. §103(a) as being unpatentable over German Patent No. 3314718 to Knoll (hereafter "*Knoll*") in view of U.S. Patent No. 6,135,681 to Nuzzi et al. (hereafter "*Nuzzi*").

The machine translation of *Knoll* previously provided by Applicant is what was available on the EPO website at the time it was printed out. The translation appears to have been improved, and the version that the Examiner provided is now available. Applicant has reviewed the updated translation, but still disagrees with the interpretation of this document by Examiner. In particular, the Office Action states that "Fig. 2a and 2b of German '718 show a single-lip gun drill having a cutting edge 40 and an adjacent chip forming/breaking groove 38 that leads to steps 41." Additionally, the Office Action states "[t]he German reference does not appear to give explicit details about the groove." These two statements form the starting point of the Examiner's arguments, but are based on an erroneous interpretation.

First, the element designated with reference numeral 38 in *Knoll* is not a "chip forming/breaking groove 38" as stated by the Examiner. Instead, element 38 is a (plane) rake face 38. According to the esp@cenet machine translation, the rake face can also be translated as "chip surface." This surface is explicitly described as a plane surface and the relevant section of the translation provided by the Examiner states this clearly (emphasis added):

"Also with the embodiment in accordance with Fig. (*sic*) 2 the drill head 31 at its free end is with planar, to each other inclined surfaces 35, 36, 37 provided, in addition with a rake face 38, which lies in the longitudinal center plane of the head..."

This confirms that rake face 38 is a planar surface, not a groove. Applicant has amended claim 1 to recite that the chip former of the present application is substantially U-shaped. Further, since the surface 38 lies in the longitudinal center plane of the head, this surface necessarily forms a 0 degree rake angle. In order to clarify this difference, Applicant has additionally amended claim 1 herein to define the rake angle, specifying that the rake angle defined in the present claims is between the tool face and an imaginary line perpendicular to the face of the workpiece to be machined, which finds support in at least paragraph [0037] of the application as filed. It is clear that the planar surface 38 of *Knoll* lies along such a line, defining a 0 degree rake angle, which is a fact that is evident to a person of ordinary skill in the art. Using the terminology explained in paragraph [0007] of the present application, the rake face 28 of *Knoll* corresponds to the "chip surface" of the present application, against which chips are fed. If a chip surface (rake face) lies in a longitudinal center plane of the head, it necessarily follows that the surface is a plane surface and that the rake angle is 0 degrees.

As discussed in paragraph [0008] of the present application, a 0 degree rake angle is used in conventional single-lip drills and leads to the cut off chips feeding against the tool face at right angles. This leads to a strong compression of the chips on meeting the tool face, and thus an increased loading of the tool face which can lead to increased heat generation due to the friction between the chips and the workpiece.

With regard to *Nuzzi*, it is still believed that person of ordinary skill in the art would not consider combining the teaching of *Knoll* with the teaching of *Nuzzi*. As mentioned above, the explicit teaching of *Knoll* states that the chip surface 38 (rake face 38) of *Knoll* forms a 0 degree rake angle and that this surface is a plane surface (and not a groove as stated by the Examiner). It would be contrary to the teaching of *Knoll* to completely change the geometry of the drill head, because the two references are incompatible in this respect.

In particular, a flat bottom tool as disclosed in *Nuzzi* is not used in the same way as a single lip drill as in the present application. *Nuzzi* teaches the use of a thin replaceable drill insert 35 having cutting edges 62 and 64. As the cutting edges 62 and 64 wear down, the drill insert 35 can easily be changed using screws 38. Because of this replaceable insert, the cutting edge that is used can be relatively thin as the wear resistance is not an important consideration. However, when deep drilling bores, it is not easy to replace drill heads, as the drill head must be completely withdrawn

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from the bore hole in order to perform such a function. A single-lip drill is a standard drill used for deep drilling, in which the drill head and the cutting edge are integrally formed. A single-lip drill must therefore have a high wear resistance so that it can be used for a sufficient length of time, however, such requirements generally increase the need for coolant. There is no incentive for a person of ordinary skill in the art to use a rake angle from a document such as *Nuzzi* in a deep drilling tool, because there would be an anticipated reduction in wear resistance.

Thus, applicant believes that there is no motivation to combine the references, and that claim 1 relates to patentable subject matter.

Similar arguments are applicable to claim 15, which has been amended to include the definition of the rake angle and chip former that are also now included in claim 1.

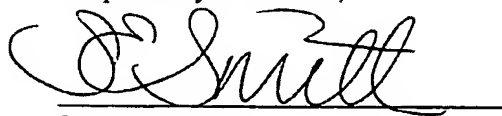
For the foregoing reasons, independent claims 1 and 15 are believed to relate to patentable subject matter, and to be in condition for allowance. The dependent claims are believed allowable because of their dependence upon an allowable base claim, and because of the further features recited.

II. Conclusion

Applicants have made every effort to present claims which distinguish over the prior art, and it is thus believed that all claims are in condition for allowance. Nevertheless, Applicants invite the Examiner to call the undersigned if it is believed that a telephonic interview would expedite the prosecution of the application to an allowance. In view of the foregoing remarks, Applicants respectfully request reconsideration and prompt allowance of the pending claims.

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Respectfully submitted,



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